

WHAT IS CLAIMED IS:

1 1. A portable electronic system configured for a secure transaction,
2 comprising:

3 a card having a width, length, and thickness, wherein a ratio of length to
4 thickness is at least 5;

5 a storage medium to store data; and

6 an integrated circuit device ("IC") including security information,

7 wherein the storage medium and the IC are provided within the card and;

8 wherein the security information stored in the IC is used to authenticate an
9 access request to the storage medium.

1 2. The portable electronic system of claim 1, further comprising:

2 a reader to access the storage medium, the reader including a first interface
3 and a second interface, the first interface being configured to interface with the IC and the
4 second interface being configured to interface with the storage medium.

1 3. The portable electronic system of claim 2, wherein the reader further
2 includes:

3 a security module coupled to the first interface and including a first processor,
4 the security module cooperating with the IC to authenticate the access request.

1 4. The system of claim 3, wherein the security module further includes:

2 a read-only memory, and

3 a second processor configured to perform encryption or decryption algorithm.

1 5. The system of claim 4, wherein the security module further includes:

2 a random number generator, and

3 a random access memory.

1 6. The system of claim 1, wherein the storage medium is a non-volatile
2 semiconductor device.

1 7. The system of claim 1, wherein the storage medium is a flash memory.

1 8. The system of claim 7, wherein the IC is provided directly over the
2 flash memory.

- 1 9. The system of claim 8, wherein an circuit interface is provided
2 between the IC and the flash memory.
- 1 10. The system of claim 9, wherein the circuit interface is a flexible circuit.
- 1 11. The system of claim 1, wherein the IC includes a memory, a security
2 information storage area for storing the security information, and a cryptography module.
- 1 12. The system of claim 11, wherein the security information is a
2 cryptography key.
- 1 13. The system of claim 12, wherein the memory includes a secured area
2 and a non-secured area.
- 1 14. The system of claim 1, wherein the storage medium on the card is a
2 disk, the card including a pin that is configured to move along a first direction and a second
3 direction.
- 1 15. The system of claim 14, wherein the pin moves along the first direction
2 if the card is inserted into a reader to provide an opening for accessing the disk.
- 1 16. The system of claim 15, wherein the pin moves along the second
2 direction if the card is removed from the reader, thereby closing the opening.
- 1 17. The system of claim 1, wherein the ratio of the length to thickness is at
2 least 8.
- 1 18. The system of claim 1, wherein the ratio of the length to thickness is at
2 least about 10.